IN THE CLAIMS

Please cancel claims 1-4 and 6 without prejudice or disclaimer.

Please add new claims 7-11 as follows:

Claim 1-4 (Canceled).

Claim 5 (Withdrawn): A process for growing doubly doped lithium noibate crystal as claimed in anyone of Claims 1-4, wherein said process includes the following steps:

(1) Weigh up high purity Li_2CO_3, Nb_2O_5, Fe_2O_3 and MgO, In_2O_3 or ZnO powders according to the crystal composition, and dry them at 120~150°C, then thoroughly mix them lasting for 24 hours, and keep them at 800~850°C for 2~5 hours to make Li_2CO_3 decompose sufficiently, and then sinter at 1050~1150°C for 2~8 hours to obtain doubly doped lithium noibate powder.

(2) Put the above doped lithium noibate powder into a Pt crucible after impacted, then heat the powder by a middle frequency stove; Grow the doubly doped lithium niobate crystals using the Czochralski pulling method along c or a axis via the procedures of necking, shouldering, uniform-diametering, and tailing, with the pulling rate being 1~3 mm/h, the rotation rate being 15~30 rpm, the temperature difference of the melt-crystal interface being 20°C, the temperature gradient in the melt volume near the surface being 1.5°C/mm, the temperature gradient above the melt surface being 1.0°C/mm, respectively.

(3) Pole and anneal the grown doped lithium noibate crystals at 1200°C to obtain single-domained doubly doped lithium niobate crystals.

Claim 6 (Canceled)

Claim 7 (New): A doubly doped lithium niobate crystal, comprising:

$Li_{1-x}Nb_{1+y}O_3:Fe_m, M_{qn}$

where, M is a member selected from the group consisting of Mg, Zn, and In, provided when M is Mg or Zn, q=2, and when M is In, q=3;

x is in the range of $0.05 \leq x \leq 0.13$;

y is in the range of $0.00 \leq y \leq 0.01$;

m is in the range of $5.0 \times 10^{-5} \leq m \leq 7.5 \times 10^{-4}$; and

qn is in the range of $0.02 \leq qn \leq 0.03$.

Claim 8 (New): The doubly doped lithium niobate crystal as claimed in claim 7, said

$Li_{1-x}Nb_{1+y}O_3:Fe_m, M_{qn}$

is doped with 0.007 to 0.03 wt% Fe, and M is 1.0 to 5.0 mol% Mg, where the congruent composition is [Li]/[Nb] = 0.90:0.95.

Claim 9 (New): The doubly doped lithium niobate crystal as claimed in claim 7, said

$Li_{1-x}Nb_{1+y}O_3:Fe_m, M_{qn}$

is doped with 0.01 to 0.05 wt% Fe, and M is 0.75 to 3.0 mol% In, where the congruent composition is [Li]/[Nb] = 0.91:0.95.

Claim 10 (New): The doubly doped lithium niobate crystal as claimed in claim 7, said

$Li_{1-x}Nb_{1+y}O_3:Fe_m, M_{qn}$

is doped with 0.02 to 0.06 wt% Fe, and M is 1.5 to 6.5 mol% Zn, where the congruent composition is [Li]/[Nb] = 0.87:0.95.

Claim 11 (New): A three-dimensional optical storage material, comprising the doubly doped lithium niobate crystals as claimed in any one of claims 7-9 or 10.